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Report on the control of Typhus In Naples, Italy,
December 9, 1943 to January 2nd, 1944.

Advice was received in Algiers on December 6th, 1943, that the Deputy Chief of Staff had authorized on December 5th the use of Rockefeller Foundation Health Commission personnel by AMG for the purpose of typhus control in Italy.

Drs. Fred L. Soper and W.A. Davis arrived in Naples on the evening of December 8th where they were joined by Dr. Louis A. Riehl on the 17th.

On December 9th, the local situation was discussed with Colonel Hume and instructions received to proceed with the organization of typhus control measures under the general direction of Colonel Crichton, Chief of the Division of Public Health and Welfare of Region 3, AMG.

On December 10th, a group discussion of the typhus situation was held in Colonel Crichton's office at which it was learned,

1) that a study by Dr. Marinelli indicated no typhus had occurred in Naples in the five year period previous to 1943 but that cases had been reported for 1943 as follows :

Jan. 0, Feb. 0, March 1, April 3, May 6, June 0, July 2, August 11, Sept. 18, Oct. 29, Nov. 55, Dec. first to ninth, 41. (Although these figures were later modified there was no doubt as to the trend of events and the imminence of a serious epidemic.)

2) that the typhus control service was to be organized without the financial collaboration of the Rockefeller Foundation and that necessary personnel and transportation would be furnished by the Health Department of the City of Naples under the direction of Major Gill and Professor Bergami.

3) that the typhus control service should limit its activities to delousing leaving case-finding and reporting of cases to the Health Department.

The first few days in Naples were unavoidably devoted to the essential problems of transportation, supplies, headquarters and personnel.

Transportation. One command car was assigned from AMG and another from PBS for the immediate use of Drs. Soper and Davis.... All other transportation which might be needed was promised from a pool of 19 motor cycle tricycle units belonging to the Civilian Air Raid Defense service. (Later experience was to show that very few of these units were available and that these were quite unreliable.)

On December 20th a change was made in the allotment of vehicles and from this date on one command car, two jeeps and one small town sedan were made available from the AMG and PBS motor services. Some days later the municipal authorities sent around a large passenger bus and a couple of fire department trucks to supplement the inadequate motorecycle tricycles.

Additional PBS transportation began to become available on December 26.

Supplies. Official information indicated that only 200 000 tins of MYL and no DDT were on hand in QM stores. The fifty tons of DDT ordered by AMG for Naples was not expected to arrive until early in January. A personal visit to the QM dump established the fact that there were available between 500 and 600 000 tins of MYL. An initial requisition of 20000 tins was approved and on December 17th authorization was received to draw up to 200 000 tins.

Available records also indicated the absence of hand dusters in QM stores. A personal visit to the dump revealed a small supply of small Hudson dusters which were later requisitioned. Adequate supplies of this item rapidly became available. A small number of Dobbins dusters were received from North Africa.

Considerable time and energy was devoted to the search for a suitable diluent for the preparation of DDT insecticide and to finding suitable equipment for the necessary grinding and mixing operations. Talcum was finally purchased at an exorbitant price and a very inferior product substituted on delivery. A mill for grinding the DDT concentrate was found at the Instituto Sbroterapico and a cement mixer borrowed from the Engineering Section was installed in the AMG warehouse. Due to the poor quality of talcum used, screening of the final product was necessary and locally mixed DDT was not available till Dec. 27th... At about the same time it was discovered that many of the two ounce tins supposedly containing MYL were actually loaded with DDT.

Experiments were carried out to develop a satisfactory container which could be manufactured locally for using compressed air in the application of powder. Such a container is now available awaiting only sources of compressed air for large scale application.

Considerable delay was encountered in the receipt of special items such as flashlights needed for the organization of night work in the air raid shelters.

Headquarters. Original plans of the AMG Public Health and Welfare Section called for an office at the Prefectura and a delousing headquarters at the Cotugno Hospital. This arrangement was considered unsatisfactory. An invitation from Dr. Beneduccio, the Director of the Provincial Laboratory, to establish headquarters for the Typhus Service in this institution was received on December 14th and acted upon immediately. Operations began from this base on December 15th.

Personnel. All personnel for the Typhus Service was assigned from the Municipal Health Department of the City of Naples up to December 27th when personnel began to come to the service directly from the AMG labor office. The first three doctors and the first group of nurses assigned from the Municipal Department were highly satisfactory and have formed the nucleus from which all of the delousing program has been developed. Requests for additional doctors, nurses, field workers and office staff were in general fruitless. Verbal authorization for the hiring of personnel at from 30 to 40 lira per day failed to solve the problem. Only after the confessed inability of the Municipality and of the Italian Red Cross to supply the personnel needed for an expanding service was recourse had to the labor office.

On December 19th, the local situation, as it might affect the military effort was discussed with Colonel Stone. This was followed by a discussion with General Fox, Colonel Stone and Colonel Crichton on December 21st. On December 23, General Fox made arrangements for the Typhus Service to have access to PBS sources of supplies, transportation and personnel and announced that the United States of America Typhus Commission had been authorized to assume all responsibility for the control of Typhus in Naples. On December 24 th, official advice was received from AMG Headquarters that it would be impossible for the USATC to take over the responsibility for typhus control. Fortunately it was possible to make arrangements to take advantage of PBS facilities during the period of uncertainty as to whose would be the final responsibility. With the return of General Fox, the following week, the situation was clarified and arrangements made for the United States of America Typhus Commission to take over the active control of the Typhus Service as of January 3 1944 under the immediate direction of Colonel Bishop.

DELOUSING PROGRAM.

All available personnel and transportation were used in the beginning for searching out and delousing the contacts of officially reported cases and of such additional cases as might be found in visiting contacts.

Preliminary training of personnel was undertaken at the Cotugno Hospital on December 11 using shaker tins to distribute the powder on the inner surfaces of garments which had been removed from the wearers. Hudson dusters were requisitioned and available before field work began on the 15th.

The first field job attempted was the dusting of the passengers of the first passenger train authorized to leave Naples for Bari following the Allied occupation. Passengers on later trains have been regularly dusted in an attempt to reduce the risk of typhus being carried out of Naples.

Contact Delousing. A list of the names and addresses of all typhus cases reported during November and December was compiled and a program drawn up for visits to all addresses. During these visits a search was to be made for new cases and all contacts of both old and new cases were to be powdered.

A very liberal interpretation of the word "contact" was used in determining the extent of delousing to be carried out by the contact delousing units. In home work, the contacts of the immediate family were dusted, followed by the dusting of the occupants of the rest of the building where the patient had been living at the time of onset. Finally, a temporary delousing station was often opened in the courtyard open to all corners of the immediate surrounding houses. In the case of institutions from which cases had been reported, all inmates and attendants were dusted.

It was found that contacts fell into three general groups each of which presented special problems: home contacts institutional contacts and Air Raid Shelter contacts. Home contacts were most efficiently traced and powdered by small units, insti-

tutional contacts justified larger groups of workers, whereas Air Raid Shelter contacts required night workers with curfew passes, some source of artificial light and night transportation.

Original plans called for the institutional contact service to handle the large labor groups in contact with the Allied forces but this proved to be unnecessary since both American and British forces sent their own workers for training and assumed the responsibility of delousing their own labor units.

Mass Delousing.

The organization of the mass delousing program which was an integral part of the initial proposal became possible only after the contact delousing service was operating satisfactorily and after adequate stocks of insecticide became available. Plans were drawn up for the installation of fifty delousing stations open to the general public placed at strategic points throughout the city. The first two stations were opened on December 28th, two more on the 30th and a fifth on January 1st. The mass delousing stations proved to be immediately popular.

Case Finding. One of the first results of the contact delousing work which began on December 16th was the discovery of a considerable number of additional cases which had been neither isolated nor reported. Discussion of the situation led on December 19 to authorization being given by Colonel Crichton for the organization of a case finding section and Major Cherry was assigned by AMG as chief of this section. This new case finding service began field work on December 22nd and uncovered a considerable number of suspect cases in spite of inadequate transportation facilities.

S T A T I S T I C S.

As of December 31 1943 the typhus control service was working with :

Transportation units : 3 motorcycle triecycles
 1 passenger bus,
 2 command cars
 1 small sedan
 2 jeeps
 6 weapons carriers

Personnel (civilian) 9 Office
 47 Home contact Delousing
 5 Institutions Delousing
 45 Air Raid Shelters
 5 Case Finding
 38 Mass Delousing

During the period Dec.15 to Jan.2 an estimated total of 51750 persons were powdered with insecticide. Of these over 30000 were powdered as contacts of 315 reported cases, whereas some 17000 were powdered at public powdering stations. Only about 2500 powderings, those of the RR. passengers, can be classed as obligatory.

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DATE	HOME CONTACTS	INSTITUTIONAL CONTACTS	AIR RAID SHELTERS	MASS DELOUSING (STATIONS)	TOTAL DAILY DUSTINGS.
Dec. 15	--	700	--	--	700
" 16	--	581	--	--	581
" 17	104	388	--	--	492
" 18	325	740	--	--	1065
" 19	900	---	--	---	900
" 20	1325	---	--	---	1325
" 21	1517	17	--	--	1534
" 22	1285	300	--	--	1585
" 23	897	---	--	--	897
" 24	1245	---	--	--	1245
" 25	733	400	--	--	1133
" 26	1354	437	--	--	1791
" 27	1568	300	600	--	2468
" 28	2182	500	600	862	4144
" 29	3155	500	180	1328	5163
" 30	3113	---	500	3718	7331
" 31	1428	---	447	4041	5916
Jan. 1	2082	---	446	2523	5051
" 2	3301	---		5158	8459
	26514	4863	2773	17630	51780

The Contact Delousing Service was responsible between Dec. 16th. and January 2 for calling attention to 164 possible cases of typhus not found previously listed among reported cases. The Case Finding Service called attention to an additional 87 suspect cases. No information is available as to what percentage of these cases were finally accepted as typhus.

copies attached